

PEARSON, J.

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF OHIO  
EASTERN DIVISION

IN RE: EAST PALESTINE TRAIN )  
DERAILMENT ) CASE NO. 4:23CV0242  
)  
) JUDGE BENITA Y. PEARSON  
)  
) **MEMORANDUM OF OPINION**  
) **AND ORDER**  
) [Resolving [ECF No. 627](#)]

Pending is Third-Party Plaintiffs Norfolk Southern Corporation and Norfolk Southern Railway Company’s (“Norfolk Southern”) Motion to Exclude the Expert Report and Testimony of Dr. Joseph Lemberg (“Dr. Lemberg”) ([ECF No. 627](#)) proffered by Third-Party Defendants GATX Corporation and General American Marks Company (“GATX”). The Court has been advised, having reviewed the record, the parties’ briefs, and the applicable law. For the reasons that follow, the motion is denied.

**I.**

GPLX 75465 (Car 23) – the railcar owned by GATX<sup>1</sup> – was added to Train 32N at the Terminal Railroad Association of St. Louis’s (“TRRA”) terminal in Madison, Illinois. TRRA, not Norfolk Southern, was obligated to inspect Train 32N before it departed Madison. *See* Deposition of James H. Rader ([ECF No. 629-4](#)) at PageID #: 37936:20-37937:3. Before it derailed in East Palestine, Train 32N passed over a series of hot box detectors (“HBDs”) that monitor the radiant temperatures of a train’s roller bearings to prevent derailments. A Norfolk

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<sup>1</sup> *See* Stipulation Regarding Uncontested Facts ([ECF No. 586](#)) at PageID #: 17627, ¶¶ 3-4.

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Southern HBD in Salem, Ohio recorded a bearing temperature spike on the L1 wheel of GPLX 75465 – whose failed roller bearing caused the derailment on February 3, 2023. GATX argues that Train 32N derailed in East Palestine because Norfolk Southern’s HBD system failed to inform the crew of a bearing temperature spike, which would have caused the crew to stop the train. Gary Rambo – the wayside analyst on duty when Train 32N derailed – missed the 953 alert<sup>2</sup> at the Salem detector because he was preoccupied with alerts from five other trains. *See* Deposition of Gary Rambo ([ECF No. 622-6](#)) at PageID #: 33458; 33463. The crew of Train 32N testified that had they been informed of the 953 alert at the Salem detector, they would have stopped the train before it derailed in East Palestine. *See* Deposition of Kevin Stauffer ([ECF No. 622-7](#)) at PageID #: 33626; Deposition of Michael Anthony Faison ([ECF No. 622-5](#)) at PageID #: 33401; Deposition of Javon Jordan Dep. Tr. ([ECF No. 622-8](#)) at PageID #: 33712. After the derailment, Norfolk Southern performed a vent and burn on five tank cars, and it now claims that it did so, in part, because melted aluminum tank-car components caused the pressure relief devices (“PRDs”) on those cars to malfunction.

GATX owned GATX 95098 (Car 29).<sup>3</sup> GATX 95098’s pressure plate assembly was fitted with a protective housing cover and angle valve handwheels made from aluminum, which has a lower melting point than steel. *See* Opening Expert Report of R. Peter McClellan ([ECF No. 627-4](#)) at PageID #: 37053-54, ¶ B.1.4; PageID #: 37119, ¶ D.0.2. As temperature and

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<sup>2</sup> “A 953 Alert indicates a bearing temperature spike.” Opposing Expert Report of James H. Rader ([ECF No. 629-3](#)) at PageID #: 37743 (citing Deposition of Thomas Fox ([ECF No. 622-4](#)) at PageID #: 33286; NS-CA-000692637, p. 1 (“953 Alert (Bearing Temperature Spike)”).

<sup>3</sup> *See* [ECF No. 586](#) at PageID #: 17627, ¶ 6; PageID #: 17628, ¶ 15.

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internal pressure in those cars increased, the GATX 95098 PRD activated until abruptly stopping on February 4, 2023. Subsequent inspection of the PRD on GATX 95098 revealed that the angle valve handwheels and protective housing cover were missing, the angle valves were covered in solidified molten aluminum, and there was a pool of solidified molten aluminum and loose metallic debris in the pressure plate's protective housing. *See ECF No. 627-4 at PageID #: 37053-54, ¶ B.1.4; PageID #: 37074, ¶ B.2.6.*

## II.

The Federal Rules of Evidence, and specifically [Rule 702](#), “assign to the trial judge the task of ensuring that an expert’s testimony both rests on a reliable foundation and is relevant to the task at hand.” *Daubert v. Merrill Dow Pharm., Inc.*, 509 U.S. 579, 597 (1993). [Rule 702](#) governs the admissibility of expert testimony and codifies the Supreme Court’s holdings in *Daubert* and *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137 (1999). Expert testimony is admissible only if (1) the testimony is based on sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the expert has reliably applied the principles and methods to the facts of the case. [Fed. R. Evid. 702](#). The proponent of the expert testimony has the burden of establishing by a preponderance of the evidence that the proposed testimony satisfies those standards. *See Fed. R. Evid. 702 advisory committee’s note (2000); Daubert, 509 U.S. at 592 n.10.* Expert testimony is not admissible “is the exception rather than the rule.” *In re Scrap Metal Antitrust Litig.*, 527 F.3d 517, 530 (6th Cir. 2008) (quoting [Fed. R. Evid. 702 advisory committee’s note \(2000\)](#)).

Furthermore, *Daubert* analysis includes consideration of [Fed. R. Evid. 403](#). *Daubert, 509 U.S. at 595.* Therefore, courts in the Sixth Circuit employ a four prong test to determine the

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admissibility of expert opinions: “(1) that the witness, a qualified expert, (2) was testifying to a proper subject, (3) which conformed to a generally accepted explanatory theory, and (4) the probative value of the testimony outweighed its prejudicial effect.” *United States v. Smithers*, 212 F.3d 306, 312 (6th Cir. 2000) (citing *United States v. Green*, 548 F.2d 1261 (6th Cir.1977)).

### III.

Dr. Lemberg is an engineer with a Ph.D. in materials science and engineering who specializes in metallurgy. *See* Deposition of Dr. Lemberg ([ECF No. 627-6](#)) at PageID #: 37267:7-12; Opposition Expert Report of Dr. Lemberg ([ECF No. 627-5](#)) at PageID #: 37202, § 1.1. He has also worked on bearing burnoffs and on programming and configuring alerts and alarms for temperature measurement systems. *See* [ECF 627-6 at PageID #: 37282:20-37283:1, 37297:17-23, 37332:13-16](#). He opines on Norfolk Southern’s HBD system and whether it was proper for GATX’s tank car to have aluminum components. Specifically, he opines on how Norfolk Southern’s HBD system operates and concludes in his report that the system prevented Train 32N’s crew from stopping the train prior to derailment. According to Dr. Lemberg, Norfolk Southern’s HBD system should have generated an “853 alert”<sup>4</sup> as well as the “953 alert” that it generated for Train 32N. He also opines that GATX 95098’s (one of the five derailed tank cars carrying vinyl chloride monomer (“VCM”) that was part of the vent and burn operation) use of aluminum components in its PRDs was proper in light of the federal regulations and the Association of American Railroads (“AAR”) Tank Car Specifications.

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<sup>4</sup> “Norfolk Southern’s HBD ‘853 alert’ is intended to flag bearings that are trending hot but have not yet surpassed 170 °F above ambient (which triggers an audible alarm for the train crew).” [ECF No. 627-5 at PageID #: 37210](#) (citing NS-CA-000692637 – 51).

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Dr. Lemberg's opinions fall into one of two categories: (1) opinions relating to Norfolk Southern's use of HBDs and its specific alert criteria (opinions 1 and 2 in his report); and (2) opinions relating to the design of GATX 95098 and whether that design affected performance of the railcar's PRDs (opinions 3 and 4 in his report).

#### A.

Norfolk Southern moves to exclude Dr. Lemberg's report and testimony under *Daubert* arguing that Dr. Lemberg is unqualified and that his opinions are irrelevant, unreliable, and improper. Dr. Lemberg's first opinion that "Norfolk Southern set a requirement that a bearing's temperature be measured as an outlier for three HBDs before action was taken to notify the crew and stop the train, even though it was aware that journal burn-offs can occur rapidly." [ECF No. 627-5 at PageID #: 37205, § 3](#). Norfolk Southern argues that this is not an opinion at all. Rather, it is nothing more than a recitation of purported facts based on evidence in the record.

To the extent Dr. Lemberg's first opinion is an opinion, Norfolk Southern contends it is unreliable *ipse dixit*<sup>5</sup> and should be excluded. See [Gen. Elec. Co. v. Joiner](#), 522 U.S. 136, 146 (1997) (Exclusion is proper for "opinion evidence that is connected to existing data only by the *ipse dixit* of the expert."). Any reasonable reading of Dr. Lemberg's report, however, shows otherwise. To arrive at his HBD opinion, Dr. Lemberg reviewed documents (including the Federal Railroad Administration's ("FRA") "An Implementation Guide for Wayside Detector Systems" and various NTSB documents), [ECF No. 627-5 at PageID #: 37205-209, § 3.1-3.3](#), deposition testimony from Norfolk Southern witnesses (including Thomas Fox (who worked at

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<sup>5</sup> " 'Ipse dixit' means a 'bare assertion resting on the authority of an individual.' " [United States v. Barnes](#), 295 F.3d 1354, 1362 (D.C. Cir. 2002) (citing *Black's Law Dictionary* 961 (4th ed. 1968)).

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the wayside desk) and Gary Rambo (the wayside analyst on duty when Train 32N derailed), *id.*, and industry sources (including specific presentations related to railcar bearing failure and defect detection presented at the American Society of Mechanical Engineers conferences), *id. at PageID #: 37207-209, § 3.3.*

**B.**

Dr. Lemberg's second opinion is that “[t]he Norfolk Southern wayside detector system did not send a signal for a ‘very critical’ 853 alert in Salem, OH, even though the criteria to trigger such an alert were met.” [ECF No. 627-5 at PageID #: 37210, § 4](#). Dr. Lemberg opines that Norfolk Southern's HBD system should have generated an “853 alert” as well as the “953 alert” that it generated for Train 32N. An 853 alert is a “very critical” alert that takes priority over other alerts, like a 953 alert. [ECF 627-5 at PageID #: 37210-11, § 4.0](#) (quoting Deposition of Michael Fabery ([ECF No. 624-7](#)) at PageID #: 34475). Norfolk Southern argues that this opinion is unreliable because Dr. Lemberg “misunderst[ood] . . . the 853 alert criteria and is substantively incorrect.” Norfolk Southern's Memorandum in Support ([ECF 627-1](#)) at PageID #: 36910. But Dr. Lemberg bases his opinion not on a misunderstanding, but on Norfolk Southern's own submission to the NTSB that describes its HBD system. See [ECF 627-5 at PageID #: 37210, n. 27](#) (citing NS-CA000692637); [ECF 627-6 at PageID #: 37344:18-19](#). That submission provides a factual basis for Dr. Lemberg to conclude that Norfolk Southern's HBD system should have generated an 853 alert for Train 32N.

**C.**

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Dr. Lemberg's third opinion is that '[t]he use of [an aluminum protective housing cover and aluminum angle valve handwheels] and a Midland A-34247 PRD on GATX 95098 was proper.' [ECF No. 627-5 at PageID #: 37212-18, § 5](#). Dr. Lemberg – a metallurgical engineer with a Ph.D. in materials science and engineering – opines on how aluminum reacts when exposed to heat, and whether the use of aluminum was proper on a tank car carrying VCM. His combined experience with failure analysis and metallurgy gives him the understanding to evaluate Norfolk Southern's claim that aluminum should not have been used on GATX 95098. And he not only relies on his "engineering knowledge, training and experience" to opine that aluminum was proper, but he also has prior experience "reviewing and evaluating" "the federal regulations and the AAR tank car specifications" to determine whether subject tank cars "had been constructed, inspected, repaired, maintained in accordance with those AAR specifications," "consult[ing] on issues relating to the engineering of rail tank cars," and in "material selection assistance for consumer products." [ECF 627-6 at PageID #: 37272:10-15; 37283:5-8; 37303:4-13; 37350:3-11](#).

**D.**

R. Peter McClellan is one of Norfolk Southern's expert witnesses. *See* [ECF No. 627-4](#). Dr. Lemberg's fourth opinion is that "Mr. McClellan incorrectly asserts that the last requalification date for GATX 95098 is '*unknown*.'" [ECF No. 627-5 at PageID #: 37219, § 6](#) (italics in original). Norfolk Southern argues that, like the first opinion, this is not an opinion at all. Rather, it is nothing more than a recitation of purported facts based on evidence in the record. According to Norfolk Southern, this "opinion," the entirety of which is comprised of nine sentences in a less-than-half-page summary of GATX 95098's requalification and

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maintenance history, is merely an attempt to correct a perceived factual inaccuracy in Mr. McClellan's opening expert report—a minor and ultimately irrelevant one at that, *see* McClellan Rebuttal Report ([ECF No. 627-7](#)) at PageID #: 37424, ¶ E.1.2. But a counter-narrative of facts is not a proper subject of expert testimony, and to the extent GATX wishes to use those facts to somehow impeach Mr. McClellan's credibility, it is free to do so on cross-examination.

#### IV.

Norfolk Southern argues that each of Dr. Lemberg's proffered opinions should be excluded as inadmissible under [Fed. R. Evid. 702](#) due to his lack of relevant experience. According to Norfolk Southern, Dr. Lemberg is not qualified to give an opinion on HBDs, Norfolk Southern's wayside detector system or the way in which the GATX 95098 operated on the night of the derailment.

While under cross-examination by Norfolk Southern at his deposition, Dr. Lemberg testified as follows:

Q And have you ever consulted on hot bearing detectors or HBDs?

A I have not, but as I mentioned earlier, the principles in terms of the operation of those devices are driven by fundamental science and engineering concepts like emission of infrared radiation and the conversion of signals from sensors to electrical signals that can be converted into temperatures and control systems based on that information. And so I have experience and expertise in those areas, but I have not specifically consulted on a HBD before.

Q Have you ever consulted on -- prior to this case, have you ever consulted on wayside defect detectors before?

A I have not, but again, the concepts that drive how those technologies work are fundamental engineering and scientific concepts. They're just applied in the rail industry.

Q Prior to this case, have you ever consulted on issues relating to a railroad's wayside help desk before?

A I have not, but I have experience in configuring control systems based on temperature information and setting alarms and alerts as part of that process through my research.

Q So that would be alarms and alerts in the lab?

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A That's correct.

ECF No. 627-6 at PageID #: 37282-83. Additionally, Norfolk Southern acknowledges that Dr. Lemberg's experience includes " 'three or four' consulting projects related to the rupture of a tank car, . . . 'evaluating the performance of angle valves' . . . and some laboratory work concerning the coatings used on the 'valve handle on an unloading valve.' " ECF 627-1 at PageID #: 36903 (citing to portions of ECF No. 627-6).

The Court finds that given Dr. Lemberg's experience with mechanical performance, heat transfer, heavy equipment failures, diagnosing failures of metal systems, bearing burnoffs, and configuring alerts and alarms for temperature measurement systems, he is qualified to testify about the design of Norfolk Southern's HBD system and that it "prevented the crew of Train 32N from learning that the L1 bearing was overheated in time to stop the train before it derailed." See ECF 627-5 at PageID #: 37209, § 3.3.

V.

For the foregoing reasons and those that have been articulated in the memorandum of the points and authorities on which GATX relies, Norfolk Southern's Motion to Exclude the Expert Report and Testimony of Dr. Lemberg (ECF No. 627) is denied.

IT IS SO ORDERED.

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Date

January 19, 2025

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*/s/ Benita Y. Pearson*  
Benita Y. Pearson  
United States District Judge